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Factsheet

HEALTH PROTECTION AND SANITATION STRATEGIES FOR CATTLE

(Replaces Factsheet, "Isolation and Sanitation Management for Cattle", March 1981)

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INTRODUCTION

Owners who are genuinely concerned with the health, well-being, and productivity of their cattle recognize that disease outbreaks are preventable. They adopt health management practices to prevent the introduction and/or spread of diseases in their herds.

There are very sound economic reasons for disease prevention. Some herd owners spend thousands of dollars each year fighting disease outbreaks. In addition to the costs of health care, valuable livestock and production are also lost. Animal welfare, pride in stockmanship and peace of mind are also major incentives to minimize disease occurrence.

This Factsheet describes herd health management strategies which prevent disease.

A. Management of New Arrivals

There are four main strategies for managing the potential introduction of disease by new arrivals to the farm.

1. Maintain a closed herd

The first method is not to purchase cattle. For practical reasons, there are few truly closed herds in Ontario. Owners would have to strictly adhere to the following requirements:

- use home-grown replacements for maintaining and increasing herd size;
- prevent fence-line contacts of their stock with other cattle;
- use artificial insemination for breeding and not bring in bulls;
- not exhibit at shows; and
- restrict visitors.

2. Isolate new arrivals

Quarantine of incoming animals is ideal. In most herds, minimizing contact with the rest of the herd may be the only practical method of isolation. To isolate new arrivals:

- use separate housing, feeding, and calving areas (ideal) or
- use separate housing and feeding areas (acceptable) or
- physically prevent contact with other cattle (minimum acceptable);
- prevent manure movement from the isolation area to the rest of the herd;
- isolate for 21 to 30 days;
- observe and examine for early disease detection;
- milk isolated cows last; and
- test for diseases prior to addition to the main herd.

3. Know source of purchases and use laboratory testing

Many owners take precautions when purchasing animals. They also use laboratory testing programs to maintain minimal disease herds or disease-free herd status. Strategies include:

- purchase from herds of known status such as those certified under the "Canada Health Accredited Herds" program;
- purchase pregnant or virgin heifers to minimize the risk of introducing mastitis; and
- determine the vaccination and health status of individuals and the herd of origin.

The 21 to 30 day isolation period is ideal for:

- bacterial culture of milk; and
- blood testing for specific diseases.

Additional information on the Canada Health Accredited Herds program is available from the District Veterinarian, Food Production and Inspection Branch, Agriculture Canada, in your county or district.

4. Use vaccinations

Vaccines are commonly used to protect cattle against respiratory disease and abortion. For purchases, these vaccines may be given during the 21 to 30 day isolation period. Consult your veterinarian for specific recommendations.

B. Management of Farm Traffic

Farm visitors can spread cattle diseases within a farm and among farms. Birds, rodents, pets, people, and vehicles should be considered potential disease carriers.

1. Control birds

Pigeons, sparrows, starlings, and swallows are the most common birds found in and outside barns. They may act as carriers of infectious agents on their feet and within their digestive system. To control bird populations:

- plug small and large nesting holes and perches in your barn which are suitable for sparrows and starlings;
- screen all openings in natural ventilation dairy barns;

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Table 1. Common disinfectants for farm use

Name	Manufacturer	Active Ingredient
1-Stroke Environ	A.P.A.	phenol
Amino-Germ	DISPAR	quarternary ammonium compound
Bioguard PFD™ -5	DISPAR	quarternary ammonium compound
Coverage-256	A.P.A.	quarternary ammonium compound
Formaline	DISPAR	formaldehyde
Germ Kill for Dairying	SHUR-GAIN	iodine
Germex	SALSBURY	quarternary ammonium compound
Hibitane Disinfectant	AYERST	chlorhexidine acetate
Liquid Germ Kill	SHUR-GAIN	iodine
LpH	A.P.A.	phenol
Lysoquat	WINTHROP	quarternary ammonium compound
Lysovet	WINTHROP	phenol
M.P.D.	DAVIS & LAWRENCE	phenol
Multi Phenolic Disinfectant	BIO AGRI MIX	phenol
Premise Disinfectant	WESTAGRO	iodine
Rocco	A.P.A.	quarternary ammonium compound

- seal off openings into silo roofs; and
- screen ledges used as nesting sites by pigeons.

2. To control rats and mice:

A single rat deposits 25,000 droppings and a mouse 17,000 droppings in one year. Even a small population of these rodents may severely contaminate feed supplies. In addition, rodents carry disease agents on their feet and fur, and they destroy millions of dollars worth of feed, supplies, and buildings each year. To control rats and mice:

- rodent-proof buildings;
- eliminate safe hiding places and nesting sites;
- remove food and water supplies; and
- destroy existing populations by poisoning, fumigating, or trapping.

Three publications describing detailed methods for rodent and bird control are listed at the end of this Factsheet. They are available at county offices of the Ontario Ministry of Agriculture and Food.

3. Control of people and pets

People spread contaminated material directly on footwear, hands, and clothing. To decrease the spread of contaminants:

- inform herd workers, visitors, and truckers of your farm protection methods and insist upon cooperation from these individuals;
- discourage visitors from entering the housing and feeding areas;
- discourage visitors from touching cattle and calves;
- designate a specific visitor area to minimize contacts;
- insist visitors wash their boots before entering and leaving;
- supply plastic disposable boots and clean coveralls for visitors;
- provide a footbath containing an effective disinfectant (Table 1);
- insist workers wash their hands before milking cows and after working with sick animals;
- insist workers wear protective plastic or rubber gloves for calving cows;
- control the movement of dogs and cats between farms;
- minimize the contact of dogs and cats with animals and feeding areas; and
- vaccinate farm dogs and cats.

4. Clean equipment

Disease can spread from cow-to-cow and farm-to-farm indirectly by small and large equipment. To reduce this spread:

- keep visiting vehicles out of areas accessible to livestock;
- use a new disposable needle for each animal when administering treatments;
- disinfect dehorners, hoof knives and trimmers after using on each animal;
- use your own halters and clippers rather than borrowing them;
- thoroughly wash and disinfect the inside, outside, and tires of equipment shared with neighbours;
- use separate shovels and forks for feeding and manure handling;
- sanitize nursing bottles and buckets after each calf feeding; and
- maintain clean water troughs, water bowls, and feed mangers.

C. Management of Groups and Housing

Young animals acquire infectious diseases through exposure to older infected or carrier animals (Table 2). Housing and management systems, especially for dairy cattle, are constructed to minimize contact between young and older animals. In effect, the young are given time to develop immunity to diseases before joining the adults. The facilities also permit implementation of feeding and management practices to assure maximum growth, health, and comfort. Owners implementing these strategies should:

- separate pre-weaned dairy calves from all other age groups;

Table 2. Examples of diseases spread from older to younger cattle

Disease	Transmission
E. coli scours	contact with feces
Salmonellosis	contact with feces
Leptospirosis	contact with urine, uterine discharge, aborted foetus
Johne's	contact with feces
Enzootic Bovine Leucosis	contact with blood from needles, dehorners, tattoo pliers
Bovine Virus Diarrhea	contact with body fluids from sick and carrier animals
Gastrointestinal parasites	contact with eggs in feces
Coccidiosis	contact with oocysts in feces

- house each dairy calf in an individual pen or hutch;
- place hutches away from dairy barn exhaust fans;
- house 4 to 8 month old dairy calves in small groups separately from older heifers;
- house yearling and breeding age dairy heifers separately;
- separate replacement beef heifers from the cows;
- separate dry dairy cows from milking cows;
- provide a clean maternity pen for calving cows;
- move beef cows to a clean pasture, away from the wintering area, for calving;
- segregate cows with mastitis to the end of the milking order;
- provide adequate pen, stall or bedded area per animal;
- provide adequate feed bunk length and water trough access per animal; and
- organize chore routine to feed and milk isolated cattle after the main herd.

D. Sanitation and Disinfection Management

Spread of disease is reduced when premises are clean and sanitary. In some cases, Provincial legislation assures that minimum standards will be maintained. For example, the Milk Act (1987) regulates sanitation on dairy farms in Ontario. Several common management procedures assure adequate sanitation of farm premises.

1. Dispose of dead animals

Carcasses can be a hazard to people and other animals. They contaminate soil, air, and water and require special handling. To minimize property contamination and risk of disease spread:

- dispose of a dead animal within 48 hours of its death;
- call a licensed collector to remove a dead animal;
- bury a carcass with a minimum of 2 feet of soil when deadstock removal is not available;
- include contaminated bedding, milk, manure, or feed in the burial pit;
- clean and disinfect the area after carcass removal;
- wear protective clothing when handling deadstock;
- secure small carcasses in pest proof containers until disposal; and
- comply with the other regulations described in the Dead Animal Disposal Act, Ontario, 1987.

2. Manage manure and control flies

Many infectious agents pass in feces and urine of infected animals. The agents may contaminate feed, water, and housing. Thus, to reduce the risk of disease spreading by manure:

- plan and install a manure system to prevent environmental contamination and comply with the Agriculture Code of Practice;
- compost or store manure under conditions which destroy most disease producing bacteria;
- remove manure frequently from barns, yards and holding areas to prevent completion of parasite and fly life cycles;
- control the fly population;
- store manure so as to be inaccessible to cattle, especially young stock;
- protect young stock from exposure to manure piles; and
- assure clean teats and udders for nursing calves by using clean calving areas and bedding packs.

3. Manage maternity, sick, and calf pens

Exposure of freshening cattle and calves to infectious agents is reduced by carefully managing maternity and sick pens. For disease control:

- use maternity pens only for freshening cattle;
- use sick pens only for sick cattle;
- clean all manure from the pens after use;
- disinfect the walls and floors after use;
- allow the pens to dry after disinfection;
- bed the pens well before the next animal enters; and
- move cows and heifers to clean, dry pastures or paddocks for calving.

4. Use of disinfectants

Information about disinfectants is available from farm supply dealers, veterinarians, the Canadian Animal Health Institute, and the product manufacturers.

The *Canadian Compendium of Veterinary Pharmaceuticals, Biologicals and Specialties, 1989* contains the monographs of many common disinfectants. The indications for use, special properties, advantages, cautions, and directions are described for each product. Your veterinarian should have a copy of this book in his/her veterinary clinic.

Owners should familiarize themselves with the product information contained on the product label or package insert before making a selection. For a particular application, owners should determine if a product:

- has activity against bacteria, fungi, or viruses;
- is active in organic debris (manure);
- is effective in hard water;
- has decreased activity in heat;

- has residual activity for a period of time after application;
- is compatible with soaps
- is caustic or has irritating fumes;
- can be used on feeding equipment;
- can be disposed of in accordance with provincial regulations; and
- is appropriate for the intended use.

Disinfectants for stables, housing and footbaths for visitors are shown in Table 1. These were obtained from the Compendium and are listed as examples, not endorsement. Other products may be available. Use the product information brochure to determine if a product meets the criteria for your application.

ALWAYS READ AND FOLLOW LABEL INSTRUCTIONS.

CONCLUSIONS

It is a mistake to conclude that the work of disease prevention is ever finished. Owners have the ultimate responsibility for herd protection. Herd protection and sanitation strategies for disease prevention are:

- manage new arrivals,
- control farm traffic,
- separate animal groups, and
- sanitize and disinfect.

Give your herd sanitation management a checkup using the lists printed above. Consult with your veterinarian regarding which strategies to use in your herd health program. Implement the appropriate strategies to insure health and comfort for your cattle. Make sure that all your workers and visitors are aware of their role in safeguarding the health of your herd.

SOURCES OF ADDITIONAL INFORMATION

1. *Control of rats and mice*. Agriculture Canada. 1986. Publication 1370/E. Communications Branch, Agriculture Canada, Ottawa. K1A 0C7.
2. *Rodent control in livestock facilities*. Ontario Ministry of Agriculture and Food Factsheet, Agdex 680.
3. *Rodent and bird control in farm buildings*. Canada Plan Service. M-9451. Available from Ontario Ministry of Agriculture and Food county offices.
4. *Planning a Manure System*. Ontario Ministry of Agriculture and Food Factsheet, Agdex 725.
5. *Canadian Compendium of Veterinary Pharmaceuticals, Biologicals and Specialties*, 1st Edition 1989. CCVPBS, 148 King St., P.O. Box 39, Hensall, On. N0M 1X0.
6. Canadian Animal Health Institute, 8 Church St., Box 291, Manotick, On. K0A 2N0.

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